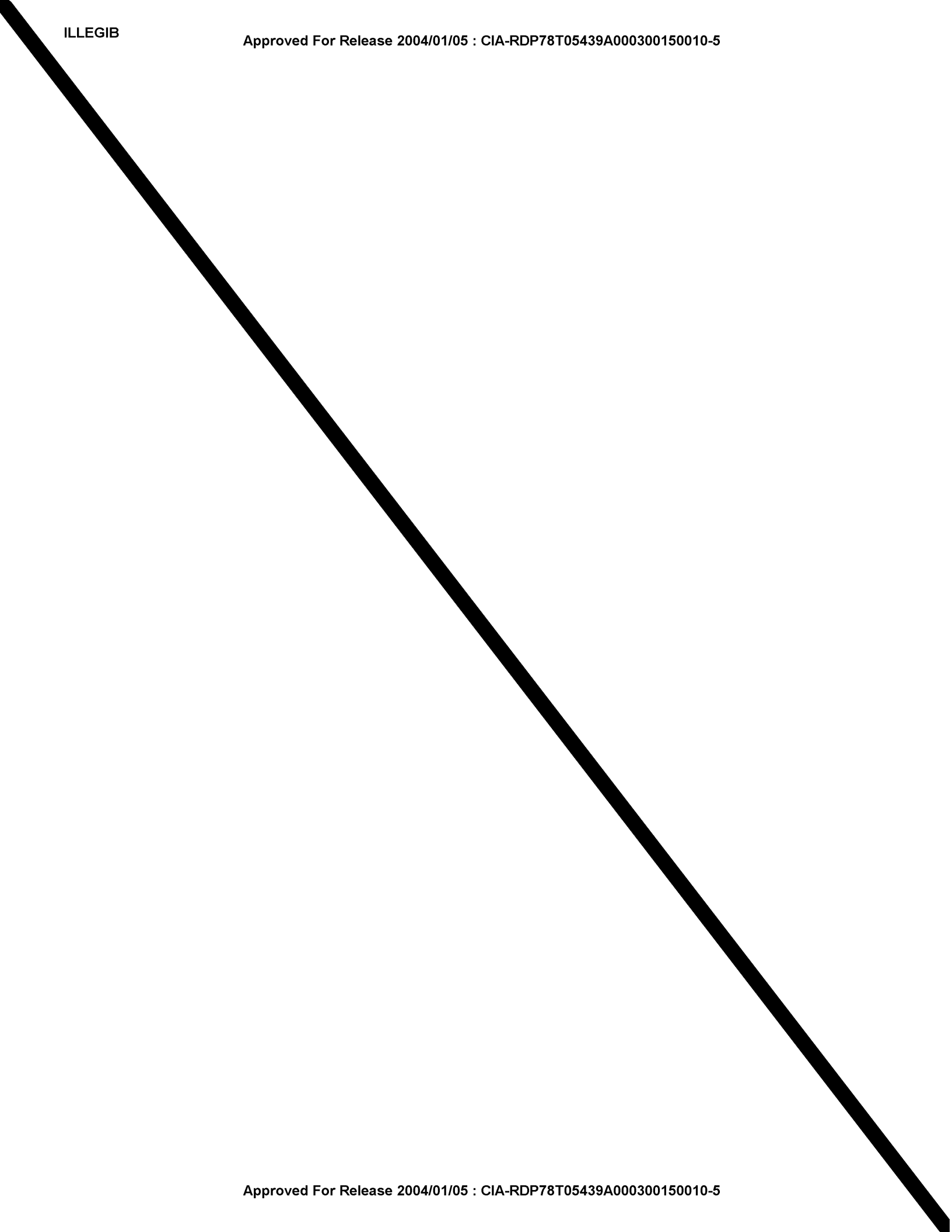

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OSI-SB/KH-64-2
5 February 1964
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SCIENTIFIC INTELLIGENCE BRIEF

# CONTINUED DEVELOPMENT OF THE EMBA MISSILE FACILITY

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Office of Scientific Intelligence

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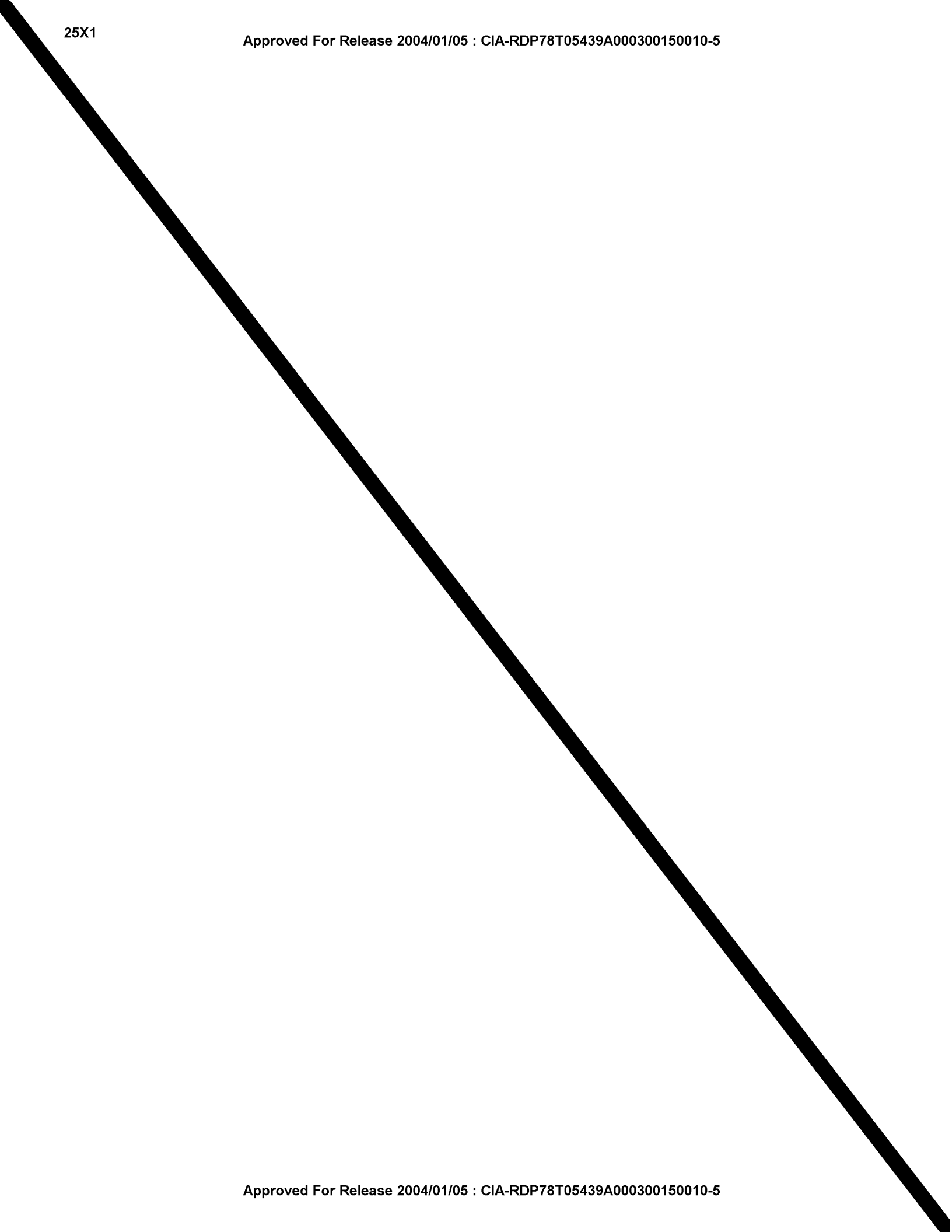

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25X1A

Ballistic Missiles and Space Division
OSI/CIA

and

25X1A

Photographic Intelligence Division
CIA

# CONTINUED DEVELOPMENT OF THE EMBA MISSILE FACILITY

## SUMMARY AND CONCLUSIONS



The Emba missile test facility was

no apparent reason to recast the previously estimated purpose of the facility -- a high priority research and development missile support launch complex of substantial size. Extensive construction has been under way and the entire complex is complete or will be within a few months.

Emba has been associated with research and scientific institutions dealing with electronics and missile-related functions and also with known Soviet missile test ranges.

The Emba facility could be for development of surface-to-air missiles, antimissile missiles, or short range ballistic missiles; the particular type cannot be determined at this time. The extensive activity at Emba suggests the



## DISCUSSION

### New Photography

Good quality photographic coverage was obtained of the missile or space



struction has continued during the intervening months. There is no evidence that the facility has launched any vehicles.

The major features readily noticeable in the new photography are:

1. Intensive activity is evident in Support Area A. Construction of one 2-story and other buildings is under way. Railroad cars are visible on the primary rail line and the area has an active appearance. (See photograph 1.)

2. The airfield has been cleared of snow to almost 10,000 feet, and 25 parked aircraft including 7 helicopters, 2 large transports, and 16 smaller aircraft, were observed.

3. A military cantonment has been built within the town, as well as a new southern barracks area close to Support Area B. (See photograph 2.)

4. New construction is evident at the rail-to-road transfer point although the rail line appears to be drifted over with snow.

5. A new instrumentation site has been constructed five miles uprange and three miles to the east of the probable launch area. (See photograph 3.) The three large buildings at this site are spaced out over 400'. The end

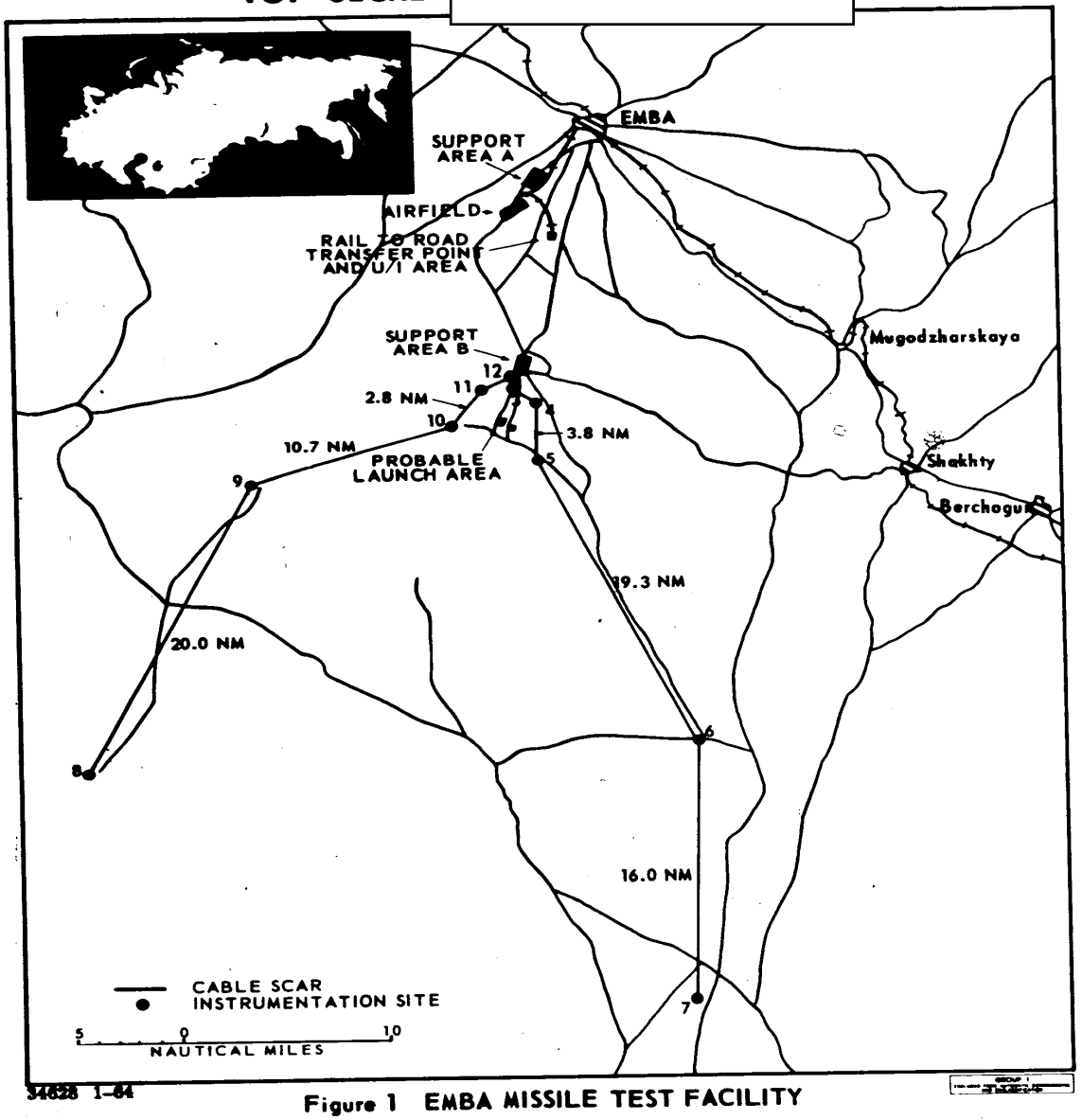


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Figure 1 EMBA MISSILE TEST FACILITY

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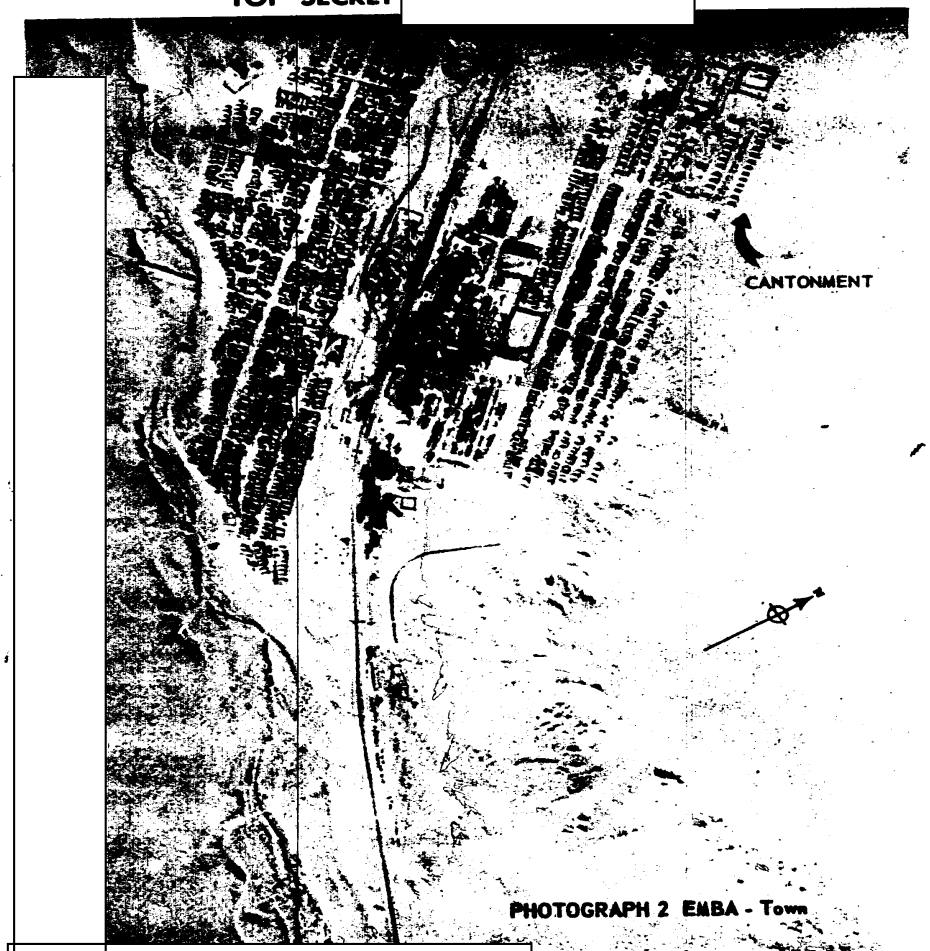


PHOTOGRAPH 2 EMBA - Town

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PHOTOGRAPH 3
EMBA - New Instrumentation Site

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DOMES

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PHOTOGRAPH 4 EMBA - Domes at Site 2




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**PHOTOGRAPH 5**
**EMBA - Probable Launch Area**

25X1B

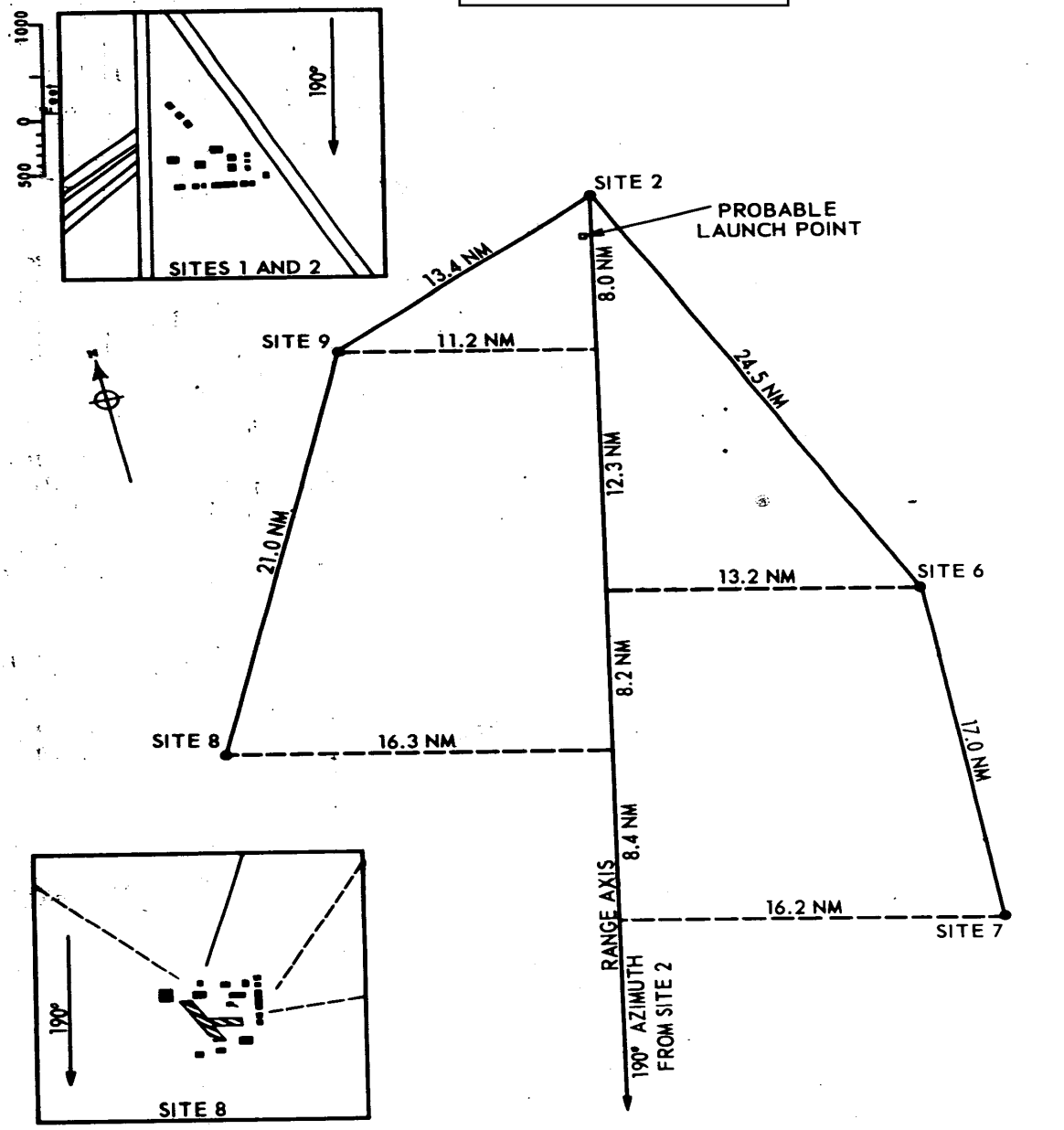


Figure 3. RANGEHEAD GEOMETRY AT EMBA

buildings are about 50' x 80' and the center building is about 40' square x 80' high. The distance across the front of the six smaller structures is on the order of 800', and there appears to be a secondary structure atop the two end buildings.

6. Domes about 20' high have been identified on top of the four "site signature" buildings at Instrumentation Sites 2, 6, 7, 8, and 9. (See photograph 4.) All downrange sites are fenced.

25X1D 7. The launch area is basically the same as it was in [redacted] The smaller, double fenced area adjacent to the probable launch area has been further developed and may be a secondary launch area. The primary launch area is now better defined. The perimeter road is more discernable; the two "pads" appear to be larger (perhaps 70' x 100'), and each has in the center a poorly defined structure. The building in the center of the area is larger than when first seen and has a cable scar extending to each of the "pads". The roads appear to have been used recently. (See photograph 5.)

**Flight Activity**

25X1D Since [redacted] aircraft movements have indicated unidentified missile related activity at Emba. The flights have continued through [redacted] without any major changes in pattern, although flights from Moscow have decreased somewhat in 25X1D volume during the [redacted] 25X1D [redacted] The existence of a separate Emba-based group of aircraft since [redacted] 25X1D emphasizes the independent nature of the facility. Flights to Emba have included those by State Committee for Aviation Technology (GKAT) aircraft based at Moscow/Sukovo Airfield which may indicate the installation or testing of electronics equipment and by GKAT aircraft based at Moscow/Khimki Airfield. The latter aircraft are subordinated to the Special Design Bureau (OKB/Plant 456) which is the major Soviet rocket engine research and development facility. General Purpose Transport Unit (GPTU) flights have linked Emba with Moscow and the major rangeheads. In addition, Tactical Air Force 1L-28 light jet bomber flights from Fergana may have performed check-out flights of ground based tracking equipment. The Emba based unit has been particularly active in unexplained flights to the Donguz-Orenburg area.

Instrumentation

The range instrumentation at Emba has always appeared to be the most intricate component of the facility and the major resources investment. Construction was possibly start[redacted]s far 25X1D along by late[redacted]e instrumentation sites and the launch area probably were finished. The rangehead is designed to handle activity up to an altitude of approximately 35 nautical miles with most activity occurring between 9 and 30 nautical miles (see 25X1

[redacted]

tect any testing which was kept within the nominal instrumentation envelope. A vehicle fired out of or toward the rangehead would be detectable.

The instrumentation envelope for Emba was developed from the range geometry and the building arrangement at Sites 2, 6, 7, 8, and 9. These sites have four domed structures which are probably tracking radars, two on each side of the long building. (See figure 3.) The number of probable radars at these

sites is adequate for tracking more than one target simultaneously. The depicted 35° to 65° elevation bounds are the practical limits of routine tracking. An extension of this envelope would be limited by excessive equipment azimuth slewing rates on the upper portion, and terrain interference on the lower.

Several types of target exist that are within the practical slew rates of the instrumentation. Based on a possible effective flight envelope for the Griffon missile, the bounds fall easily within the reasonable limits of the Emba instrumentation. Although other vehicles would also "fit" at Emba, the Griffon would require azimuth slew rates on the order of 2.0 to 3.2 degrees/second. A missile with the velocities attained by a Nike-Zeus would require azimuth slew rates of about 5 degrees/second at Emba. It has previously been calculated that a Pershing missile (330 n.m. range) impacting into Emba would require slewing rates of up to 11 degrees/second. These rates are much lower than the more than 25 degrees/second obtainable with standard, high-precision U.S. tracking radars.

25X1D

[redacted] has not provided any direct evidence on the particular type of missile to be tested at Emba. It has, however, confirmed that high priority construction of a technically intricate rangehead is continuing and that the entire complex is complete or will be within a few months. The reason for building a new rangehead for a test program that seemingly could be accommodated at either Kapustin Yar or Sary Shagan is unknown. The reason for the apparent lack of an impact area is also unknown. Although the commencement of a test program may be reflected in an increase in numbers or a change in the pattern of aircraft flights to Emba, determination of the vehicle being tested may not be made until flight test activity is detected by [redacted]